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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,299

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Shigenobu Yoshida

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EXAMINER

FREEMAN, JOHN D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,299	Applicant(s) YOSHIDA ET AL.	
	Examiner John Freeman	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

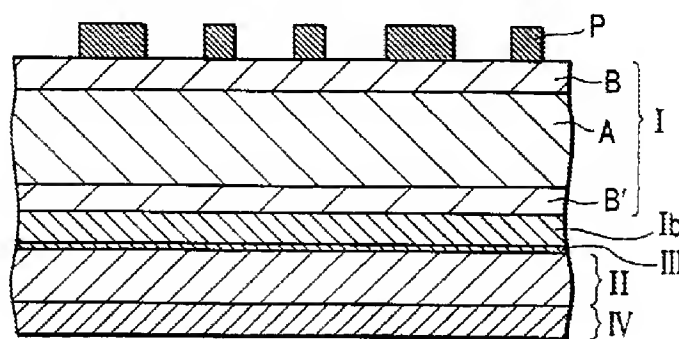
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-2, 4-5, 7-9, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959).
3. Takahashi et al. (hereafter Takahashi) discloses the following laminate structure in Fig. 3:



4. The relevant layers are defined as follows (col 6 ln 62-65; claim 16):
 - a. (I) is a microporous resin film base layer,
 - b. (Ib) is a primer layer,
 - c. (II) is a gas barrier resin film layer,
 - d. (III) is an inorganic thin film layer,
 - e. (IV) is a heat sealable resin layer, and
 - f. (P) is a print layer.
5. The laminate has the following properties (col 1 ln 60-65):
 - (i) the laminate has a water vapor permeability (JIS Z-0208) of 5 g/(m²•24 hr) or less, preferably 2 g/(m²•24 hr) or less; and
 - (ii) the laminate has an oxygen permeability (JIS Z-1707) of 5 cc/(m²•24 hr • atm) or less, preferably 2 cc/(m²•24 hr • atm) or less.
6. Takahashi teaches an inorganic film having a thickness of 5-600nm, thereby overlapping with Applicant's range (col 5 ln 36-37). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

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7. The gas barrier resin film comprises polyesters (col 5 ln 17-19). Although Takahashi mentions the thickness of the gas barrier film (II) ranges from 6-40 μm , Takahashi does not disparage lower thicknesses. One of ordinary skill that adjusting the thickness of the barrier layer would result in a necessary trade off between gas barrier properties and film flexibility. It has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)). At the time of the invention, it would have been obvious to one of ordinary skill in the art to use a gas barrier film with a lower thickness to increase the flexibility of the overall laminate.

8. Takahashi is silent with regard to the glass transition temperature, molecular weight, and hydroxyl value of the polyester used for the gas barrier resin film.

9. Kajimaru et al. (hereafter Kajimaru) disclose a polyester resin having high waterproofness, and useful as a coating [0001-4]. The polyester resin has a hydroxyl value of less than 30mg KOH/g [0035] and a weight average molecular weight of 9,000 or more [0009]. Kajimaru discloses the polyester resin has glass transition temperatures in the range of 40-100°C, thereby overlapping with Applicant's range [0036]. Example embodiments of the resin have glass transition temperatures within the range claimed by Applicant (p10, Table 1). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). The examiner notes Kajimaru's polyester resins comprise terephthalic acid, isophthalic acid, ethylene

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glycol, and neopentyl glycol [0122], just as Applicant discloses in Example 1 (p31 of the present specification).

10. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Kajimaru's polyester resin as the gas-barrier in Takahashi's laminate to improve the waterproof qualities of the barrier.

11. This table describes which layers of Takahashi correspond to a given layer of Applicant:

Applicant	Takahashi
Plastic substrate	(I) microporous base layer
Inorganic thin film	(III) Inorganic thin film
Polyester-based coating material	(II) Gas barrier resin film
Anchor coat layer	(Ib) Primer layer

12. Regarding claim 2:

13. The (I) microporous base layer comprises a synthetic paper made of polyethylene, polyamides, or polyethylene terephthalate (col 4 ln 21-24).

14. Regarding claims 4-5:

15. Kajimaru discloses isocyanate curing compounds for use in the polyester resin to improve processing, waterproofness, and solvent resistance [0078]. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use an isocyanate curing compound in Takahashi to improve processing, and waterproofness, and also keep the hydroxyl value of the isocyanate approximately the same as the value of the polyester to ensure the waterproof property of the layer.

16. Regarding claim 7:

17. The film can be chemically vapor-deposited (CVD) (col 5 ln 64) and comprises aluminum oxide or silicon oxide (col 5 ln 38).

18. Regarding claims 8-9:

19. As mentioned the primer layer corresponds to Applicant's anchor layer. The primer comprises polyurethane (col 6 ln 27).

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20. Regarding claims 12-15:

21. Since the laminate created by the combination of Takahashi with Kajimaru comprises the same layers as Applicant describes, the examiner takes the position that the laminate would intrinsically possess the properties as described in the present claims 12-15.

22. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-5, 7-9, and 12-15 above, and further in view of Hall et al. (US 2002/0009564).

23. Takahashi in view of Kajimaru is previously described.

24. Both references are silent with regard to a fatty acid, fatty ester, or fatty amide being added to the polyester resin layer.

25. Fatty acid amides are well-known slip additives to polyester, however, as evidenced by Hall et al. [0002].

26. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add fatty acid amides to the polyester resin layer to improve its slip and, therefore, handling properties. Given that the range claimed by Applicant is so broad, one of ordinary skill would have naturally arrived at values within the range during routine optimization of the amount used.

27. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-5, 7-9, and 12-15 above, and further in view of Powell et al (US 5,427,235).

28. Takahashi in view of Kajimaru is previously described. Given that claim 11 of the present application allows for layers disposed between the printed layer and heat seal layer, while describing the heat seal layer as being on the surface of said printed layer, the examiner considers the printed layer (P) to be on a surface of the (II) gas barrier layer, which corresponds to the polyester-based resin coating layer.

29. Both references are silent with regard to a printed layer having a heat seal layer thereon.

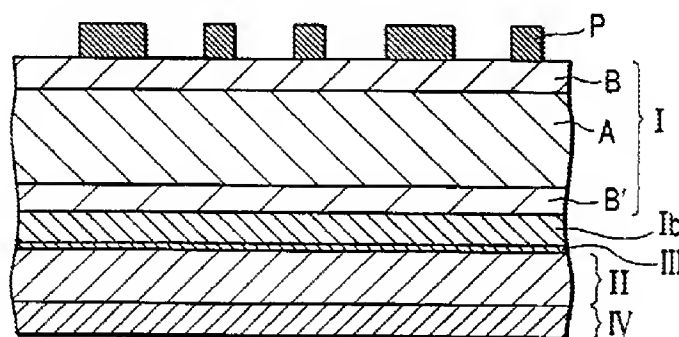
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30. Applying a heat seal layer to a printed layer was well-known in the packaging art, however. For example, Powell et al. disclose a heat seal layer applied to a printed surface (Abstract, col 4 ln 64-65).

31. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a heat seal layer to the printed layer (P) disclosed by Takahashi to create a new sealing surface as needed to protect the print layer.

32. Claims 1-2, 4-5, 7-9, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959).

33. Takahashi et al. (hereafter Takahashi) discloses the following laminate structure in Fig. 3:



34. The relevant layers are defined as follows (col 6 ln 62-65; claim 16):

- g. (I) is a microporous resin film base layer,
- h. (Ib) is a primer layer,
- i. (II) is a gas barrier resin film layer,
- j. (III) is an inorganic thin film layer,
- k. (IV) is a heat sealable resin layer, and
- l. (P) is a print layer.

35. The laminate has the following properties (col 1 ln 60-65):

- (i) the laminate has a water vapor permeability (JIS Z-0208) of $5 \text{ g}/(\text{m}^2 \cdot 24 \text{ hr})$ or less, preferably $2 \text{ g}/(\text{m}^2 \cdot 24 \text{ hr})$ or less; and
- (ii) the laminate has an oxygen permeability (JIS Z-1707) of $5 \text{ cc}/(\text{m}^2 \cdot 24 \text{ hr} \cdot \text{atm})$ or less, preferably $2 \text{ cc}/(\text{m}^2 \cdot 24 \text{ hr} \cdot \text{atm})$ or less.

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36. Takahashi teaches an inorganic film having a thickness of 5-600nm, thereby overlapping with Applicant's range (col 5 ln 36-37). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

37. Takahashi is silent with regard to the glass transition temperature, molecular weight, and hydroxyl value of the polyester used for the gas barrier resin film, as well as a thickness of the polyester layer ranging from 0.5-5 μm .

38. Kajimaru et al. (hereafter Kajimaru) disclose a polyester resin having high waterproofness, and useful as a coating [0001-4]. The polyester resin has a hydroxyl value of less than 30mg KOH/g [0035] and a weight average molecular weight of 9,000 or more [0009]. Kajimaru discloses the polyester resin has glass transition temperatures in the range of 40-100°C, thereby overlapping with Applicant's range [0036]. Example embodiments of the resin have glass transition temperatures within the range claimed by Applicant (p10, Table 1). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). The examiner notes Kajimaru's polyester resins comprise terephthalic acid, isophthalic acid, ethylene glycol, and neopentyl glycol [0122], just as Applicant discloses in Example 1 (p31 of the present specification).

39. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Kajimaru's polyester resin as the gas-barrier in Takahashi's laminate to improve the waterproof qualities of the barrier.

40. Although Takahashi mentions the thickness of the gas barrier film (II) ranges from 6-40 μm , Takahashi does not disparage lower thicknesses. Kajimaru teaches the thickness of the waterproof film may be adjusted depending on its use, but may range from 0.01-100 μm . One of ordinary skill that adjusting the thickness of the barrier layer would result in a necessary trade off between gas barrier properties and film flexibility. It has long been an axiom of United States patent law that it is not inventive

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to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)). At the time of the invention, it would have been obvious to one of ordinary skill in the art to use a gas barrier film with a lower thickness to increase the flexibility of the overall laminate.

41. This table describes which layers of Takahashi correspond to a given layer of Applicant:

Applicant	Takahashi
Plastic substrate	(I) microporous base layer
Inorganic thin film	(III) Inorganic thin film
Polyester-based coating material	(II) Gas barrier resin film
Anchor coat layer	(Ib) Primer layer

42. Regarding claim 2:

43. The (I) microporous base layer comprises a synthetic paper made of polyethylene, polyamides, or polyethylene terephthalate (col 4 ln 21-24).

44. Regarding claims 4-5:

45. Kajimaru discloses isocyanate curing compounds for use in the polyester resin to improve processing, waterproofness, and solvent resistance [0078]. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use an isocyanate curing compound in Takahashi to

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improve processing, and waterproofness, and also keep the hydroxyl value of the isocyanate approximately the same as the value of the polyester to ensure the waterproof property of the layer.

46. Regarding claim 7:

47. The film can be chemically vapor-deposited (CVD) (col 5 ln 64) and comprises aluminum oxide or silicon oxide (col 5 ln 38).

48. Regarding claims 8-9:

49. As mentioned the primer layer corresponds to Applicant's anchor layer. The primer comprises polyurethane (col 6 ln 27).

50. Regarding claims 12-15:

51. Since the laminate created by the combination of Takahashi with Kajimaru comprises the same layers as Applicant describes, the examiner takes the position that the laminate would intrinsically possess the properties as described in the present claims 12-15.

52. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-5, 7-9, and 12-15 above, and further in view of Hall et al. (US 2002/0009564).

53. Takahashi in view of Kajimaru is previously described.

54. Both references are silent with regard to a fatty acid, fatty ester, or fatty amide being added to the polyester resin layer.

55. Fatty acid amides are well-known slip additives to polyester, however, as evidenced by Hall et al. [0002].

56. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add fatty acid amides to the polyester resin layer to improve its slip and, therefore, handling properties. Given that the range claimed by Applicant is so broad, one of ordinary skill would have naturally arrived at values within the range during routine optimization of the amount used.

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57. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-5, 7-9, and 12-15 above, and further in view of Powell et al (US 5,427,235).

58. Takahashi in view of Kajimaru is previously described. Given that claim 11 of the present application allows for layers disposed between the printed layer and heat seal layer, while describing the heat seal layer as being on the surface of said printed layer, the examiner considers the printed layer (P) to be on a surface of the (II) gas barrier layer, which corresponds to the polyester-based resin coating layer.

59. Both references are silent with regard to a printed layer having a heat seal layer thereon.

60. Applying a heat seal layer to a printed layer was well-known in the packaging art, however. For example, Powell et al. disclose a heat seal layer applied to a printed surface (Abstract, col 4 ln 64-65).

61. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a heat seal layer to the printed layer (P) disclosed by Takahashi to create a new sealing surface as needed to protect the print layer.

Claim Rejections - 35 USC § 112

62. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

63. Claims 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

64. The term "biodegradable" in claim 2 is a relative term which renders the claim indefinite. The term "biodegradable" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Most polymers are degradable given a long enough timeline, therefore it is unclear which polymers would fall under this description.

Response to Arguments

65. Applicant's arguments filed 30 July 2008 have been fully considered but they are not persuasive.

66. Regarding rejections under 35 USC 112:

67. Applicant asserts "applicants clearly define the term 'biodegradable resin'" and refers to p7 of the specification. While p7 indicates commercially available resins Applicant considers to be "biodegradable," the term is not explicitly defined. For examination purposes, the examiner broadly interprets the term to include any material that can be broken down. The example submits the US Environmental Protection Agency website defines biodegradable as "capable of decomposing under natural conditions."

68. Regarding rejections under 35 USC 103:

69. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (p8), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). One of ordinary skill in the art would recognize that improved water barrier properties would be highly desirable in food packaging. For example, one would know high waterproof properties keep products drier or more moist depending on the packaged product, and therefore provide products more desirable for consumers.

70. Applicant argues "Kajimaru's objective is to provide an aqueous dispersion of polyester is [sic] not to provide a polyester resin film" (p8). The examiner simply states Kajimaru clearly forms a film from the dispersion [0002]. Applicant is reminded that according to MPEP 2141.01 (a), a reference may be relied on as a basis for rejection of an applicants' invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Kajimaru is, therefore, a reasonably pertinent reference, because it teaches an aqueous dispersion of a polyester for use as a waterproof film, which is a function especially pertinent to the invention at hand.

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71. Applicant argues the "thickness of the gas barrier resin film layer (II) in Takahashi is out of the range of the present invention as defined in claim 1" (p9). As noted in the rejections above, Takahashi does not disparage lower thicknesses, and Kajimaru provides a film with excellent waterproofness in thicknesses that overlap with those claimed by Applicant. One of ordinary skill would recognize the various trade offs involved between gas barrier properties and other properties such as film flexibility. The state of the art was such that one of ordinary skill could easily arrive at the claimed thicknesses through reasonable experimentation.

Conclusion

72. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maro '018 and '300 disclose a laminate comprising an inorganic layer, polyester, and an anchor layer.

73. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman
Examiner
Art Unit 1794

/John Freeman/
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794